

REMARKS

The Examiner's comments together with the cited references have been carefully studied. Favorable reconsideration in view of the foregoing amendments and following remarks is respectfully requested.

Claims 1-15 and 40-53 have been canceled. Claims 16-39 and 54-86 are pending in the application. Claims 26 and 63 are withdrawn from consideration. Claims 16-25, 27-39, 54-62, 64-80, and 83-86 are rejected. Claims 81 and 82 are objected to. Claims 16, 54, 81 and 82 herewith are amended. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

In Section 7 of the Office action, Claims 16-19, 22-25, 27-39, 54-56, 59-62, 64-80, and 83-86 are rejected under 35 U.S.C. 103(a) as unpatentable over US 6,495,300 B1 (Qi), as evidenced by (1) applicants' admissions at page 24, lines 17-20, and page 40, lines 8-14 of the originally filed specification (Applicants' admission I), (2) US 4,647,521 (Oguchi), (3) US 3,923,485 (Franz), (4) US 5,930,090 (Beaurline), and (5) US 4,082,710 (Vrancken); combined with US 5,427,880 (Tamura), as evidenced by Diamond, Handbook of Imaging Materials, p. 426, and Fig. 9.22 at page 430 (Diamond) and US 6,376,695 B1 (Kushibiki). In Section 8, Claims 16-25, 27-39, 54-62, 64-80, and 83-86 are similarly rejected under 35 U.S.C. 103(a) as being unpatentable over Qi, as evidenced by (1) Applicants' admission 1, (2) Oguchi, (3) Franz, (4) Beaurline, and (5) Vrancken; combined with Tamura, as evidenced by Diamond and Kushibiki. In each case, the Examiner states it would have been obvious for a person having ordinary skill in the art, in view of the teachings of Qi and Tamura, to replace the vinylcarbazole monomer of Qi with the di-panisylamino styrene monomer of Tamura as the vinyl-containing monomer comprising a hole transporting moiety in the Qi silyl-functionalized hydroxyalkyl polymer of Formula (IV-a) and to use the resultant polymer to form the overcoat layer in the photoconductive imaging member disclosed by Qi, as that person would have had a reasonable expectation of successfully obtaining a crosslinked composite polysiloxane-silica that has excellent adhesion to a charge transport layer as disclosed

by Qi and improved charge transporting characteristics as disclosed by Tamura; and an electrophotographic photoconductive imaging member having the benefits disclosed by Qi and Tamura. This rejection is respectfully traversed.

To more clearly distinguish from the cited references, claims 16 and 54 have been amended to clarify that the invention is directed toward use of a silsesquioxane of the condensed reaction product of a charge transport polymer comprising the structural units having the described formula and from 5 to 30 weight percent of basic surface charge colloidal silica based on the weight of the silsesquioxane, wherein the basic surface charge colloidal silica is stabilized with a sodium salt of silanol, and condensation is catalyzed by acetic acid, as described at page 24, last paragraph. While fumed silica as employed in Qi may be viewed as a "colloidal" silica in the form of an aerosol (i.e., particles dispersed in air), they are clearly not basic surface charge colloidal silica stabilized with a sodium salt of silanol as employed in the present invention. As has been explained, the chemistry for the colloidal silica aqueous sols employed in the present invention are distinct from that of use of fumed silicas as employed in Qi. While Qi requires milling to disperse the fumed silica and the use of aminopropyltrimethoxysilane as the base to catalyze the sol-gel reaction in the examples thereof, the use of basic surface charge colloidal silica stabilized with a sodium salt of silanol as employed in the present invention requires no milling for dispersion and itself provides the non-volatile base Na_2O present on the surface of the silica from the sodium salt of silanol. This enables easier incorporation of relatively higher levels of silica particles (i.e., 5-30 wt percent, as opposed to the 2 wt percent calculated by the Examiner for the Example of Qi, which is itself only achieved upon 3 days of ball milling!), and is believed to facilitate greater degree of condensation of the silsesquioxane, as the fumed silica itself does not carry with it the basic charge carriers in the form of sodium salt of silanol which as explained at page 24 remains to act as a basic condensation catalyst for the formation of the silsesquioxane. Increasing the level of incorporated silica is itself not trivial, as fumed silica is made up of chains of particles that agglomerate to form large aggregates, which would scatter light and therefore not be appropriate for use in a photoreceptor charge transport layer. The solids by which AEROSIL are sold are made up of these aggregates which have further associated into agglomerates. While

extensive milling may be used to break up the agglomerates, milling will typically not break up the aggregates into primary particles as achieved for aqueous sol colloidal silicas as employed in the present invention.

While the use of the specified type of silica is believed to distinguish the claimed invention from that of Qi even if modified to substitute the triphenylamino monomers of Tamura et al therein, it is further respectfully urged that there is no teaching or suggestion to make such a substitution. While the Examiner argues that Qi does not “limit” the type of vinyl-containing monomer comprising a hole transporting moiety to the distinct disclosed monomers, there is no teaching or suggestion of any other type of hole-transporting moieties. Tamura et al, on the other hand, is specifically directed towards the use of such charge transporting monomers to form an interpenetrating network of the polymerized monomers themselves in a binder resin. The in-situ photo-polymerization of the vinyl functional group taught by Tamura et al to form such interpenetrating network is not relevant to the present invention because it could not be used to prepare abrasion resistant coating based on silsesquioxanes. There is no teaching or suggestion to employ such specific monomers for any other purpose based on Tamura et al, and Qi et al only suggests the use of a distinct hole transporting moiety. Thus, the proposed combination is clearly based on impermissible hindsight in view of applicant’s own teachings.

Regarding objected-to allowable claims 81 and 82, these claims have been rewritten in independent form, based on the originally filed claims, in accordance with the original indication of allowability of such claims prior to previous amendments to claim 54.

In view of the foregoing remarks and amendment, the claims are now deemed allowable and such favorable action is courteously solicited.

Should the Examiner consider that additional amendments are necessary to place the application in condition for allowance, the favor is requested of a telephone call to the undersigned counsel for the purpose of discussing such amendments.

Respectfully submitted,



Andrew J. Anderson
Attorney for Applicant(s)
Registration No. 33,564

AJA:clb
Rochester, NY 14650
Telephone: (585) 722-9662
Facsimile: (585) 477-1148

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.